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FEDERAL - STATE - PRIVATE
COOPERATIVE SNOW SURVEYS

U. S. DEPT. OF AGRICULTURE
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CURRENT SERIAL RECORD

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
MONTANA

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

MAY 15, JUNE 1, 1966
and
SPECIAL MEASUREMENTS

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
WESTERN UNITED STATES _____	MONTHLY (FEB.-MAY) _____	PORTLAND, OREGON _____	ALL COOPERATORS
BASIC DATA SUMMARY _____	OCTOBER 1 _____	PORTLAND, OREGON _____	ALL COOPERATORS
STATES			
ALASKA _____	MONTHLY (MAR.-MAY) _____	PALMER, ALASKA _____	ALASKA S.C.D.
ARIZONA _____	SEMI-MONTHLY _____ (JAN. 15 - APR. 1)	PHOENIX, ARIZONA _____	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO _____	MONTHLY (FEB.-MAY) _____	FORT COLLINS, COLORADO _____	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO _____	MONTHLY (JAN.-JUNE) _____	BOISE, IDAHO _____	IDAHO STATE RECLAMATION ENGINEER
MONTANA _____	MONTHLY (JAN.-JUNE) _____	BOZEMAN, MONTANA _____	MONT. AGR. EXP. STATION
NEVADA _____	MONTHLY (JAN.-MAY) _____	RENO, NEVADA _____	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON _____	MONTHLY (JAN.-JUNE) _____	PORTLAND, OREGON _____	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH _____	MONTHLY (JAN.-JUNE) _____	SALT LAKE CITY, UTAH _____	UTAH STATE ENGINEER
WASHINGTON _____	MONTHLY (FEB.-JUNE) _____	SPOKANE, WASHINGTON _____	WN. STATE DEPT. OF CONSERVATION
WYOMING _____	MONTHLY (FEB.-JUNE) _____	CASPER, WYOMING _____	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA _____	MONTHLY (FEB.-JUNE) _____	WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA _____	MONTHLY (FEB.-MAY) _____	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS
for
MONTANA

Report Prepared

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TABLE OF CONTENTS

	Page
WATER SUPPLY OUTLOOK	1
MAP OF SNOW COURSES AND SOIL MOISTURE STATIONS	2
SNOW PILLOW DATA	3-6
SNOW SURVEY DATA - Additions and Corrections	7
SNOW SURVEY DATA - May 15, 1966	8-9
SNOW SURVEY DATA - June 1, 1966	10-11
SOIL MOISTURE DATA - Additions and Corrections	12
SOIL MOISTURE DATA - June 1, 1966	13
RESERVOIR STORAGE DATA	14
LIST OF COOPERATORS	Inside Back Cover

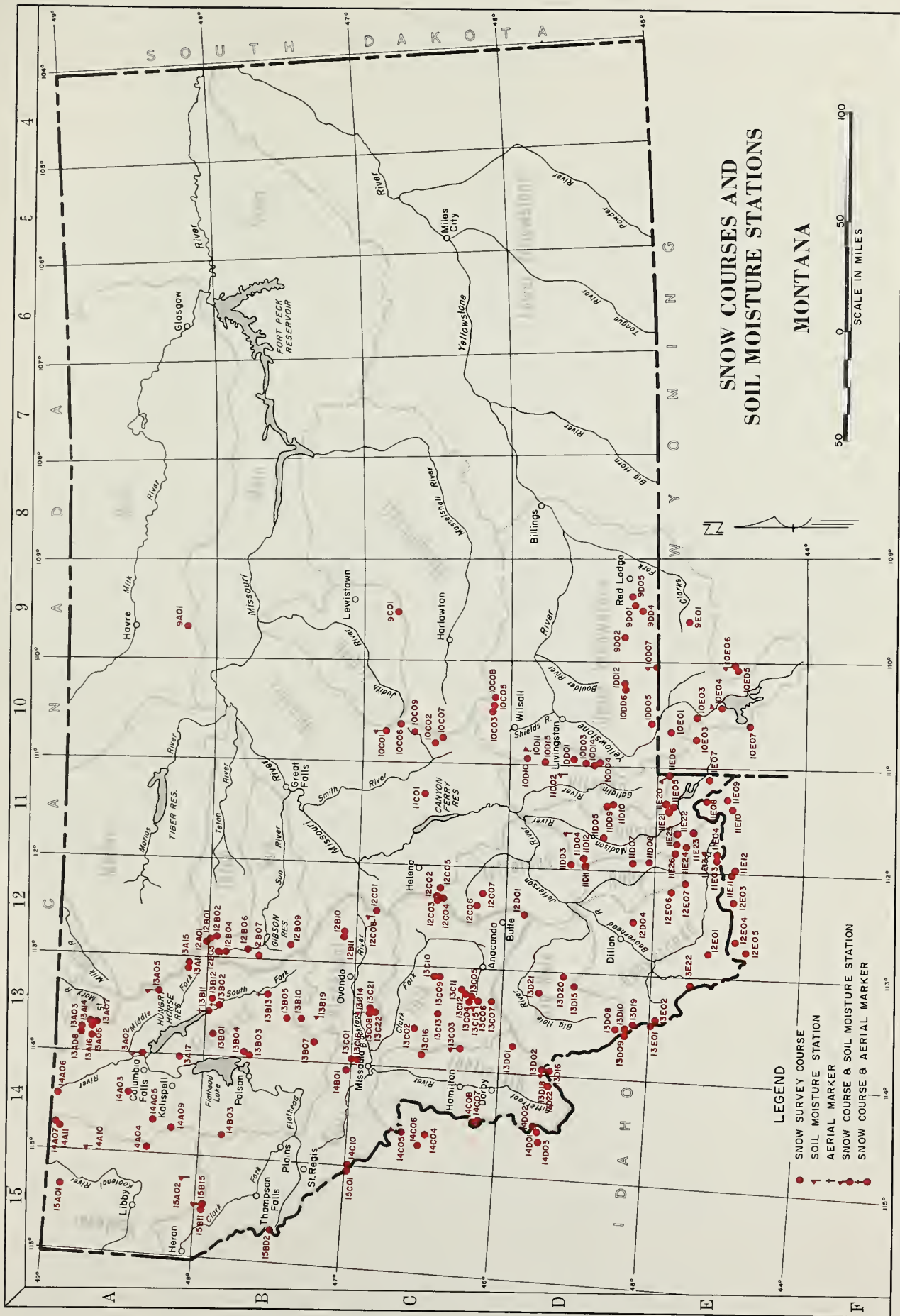
MONTANA
WATER SUPPLY OUTLOOK
June 1, 1966

The water supply outlook has not changed to any great extent during the past month with the exception of the Big Hole-Beaverhead drainage. Mountain precipitation during May was almost non-existent in this southwest corner of the State. Late season irrigation supplies are expected to be well below average.

The mountain snow pack is decreasing at a fairly uniform rate and snow remains at only the higher elevations.

With the snow cover substantially depleted the majority of the low elevation streams are now receding. Higher elevation streams are near or have recently reached their highest levels of the year.

Irrigation reservoir storage is generally near or above average.



INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

Measuring Date 17

SOIL MOISTURE STATIONS

Number	Elev.	Sec.	Typ.	Range	Began	Record
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MISSOURI RIVER BASIN (continued)

KOOTENAI RIVER										RUBY RIVER										KOOTENAI RIVER										FLATHEAD RIVER									
Station	Year	Flow (cfs)	Temp (°F)	Depth (ft)	Velocity (ft/s)	Direction	Notes	Station	Year	Flow (cfs)	Temp (°F)	Depth (ft)	Velocity (ft/s)	Direction	Notes	Station	Year	Flow (cfs)	Temp (°F)	Depth (ft)	Velocity (ft/s)	Direction	Notes	Station	Year	Flow (cfs)	Temp (°F)	Depth (ft)	Velocity (ft/s)	Direction	Notes								
Barren Creek	1961	5500	36	26H	31M	1966		2		11008	8600	28	98	2M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1962	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1963	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1964	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1965	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1966	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1967	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1968	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1969	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1970	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1971	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1972	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1973	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1974	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1975	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1976	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1977	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1978	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1979	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1980	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1981	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1982	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1983	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1984	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1985	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1986	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1987	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1988	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1989	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1990	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1991	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1992	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1993	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1994	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1995	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1996	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1997	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1998	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	1999	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2000	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2001	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2002	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2003	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2004	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2005	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2006	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2007	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2008	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2009	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2010	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2011	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2012	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		1501.9M	3800	5	25H	3M	1964	Monthly								
Barren Creek	2013	5500	36	26H	31M	1966		2		12007	7900	34	128	4M	1963	3,4,5	1						1		15														

MISSOURI RIVER BASIN

13802	7000	23	25N	15W	1948	1,2,3,4,5	1,2	Jack Creek	11822	7500	13	68	1E	1961	3,4,5	1	BEAVERHEAD RIVER	113134	6700	23	14S	2W	1962	Monthly	10
13801	6100	9	25N	17W	1948	3,4,5	1	Lake Creek	11825	6100	27	115	1E	1965	3,4,5,5,6	1									
13800	7000	24	25N	16W	1951	1,2,3,4,5	1,2	Loon Lake Creek	11811	7600	12	128	1E	1965	3,4,5,5,6	1	Lakeview								
13805	7000	23	25N	15W	1948	3,4,5	1	North Meadow	11803	7500	24	128	3W	1961	3,4,5	2	MADISON RIVER								
								Potomac Park	11821	7250	33	108	3E	1965	3,4,5	2									
								Sentinel Creek	11820	8300	17	128	1E	1965	3,4,5	2	Red Bluff	118024	4800	7	3S	1E	1961	Monthly	7
								West Yellowstone	11807	6700	34	138	5E	1934	1,2,3,4,5	3	GALLATIN RIVER								
13213	7100	26	8N	15W	1959	3,4,5,5,6	1,2	Arch Falls	10014	7350	3	58	6E	1963	2,3,4,5,5,6	1									
13214	5700	1	15N	9W	1962	3,4,5	1,2	Bear Basin	11109	8250	9	68	3E	1963	3,4,5	1	Bridger Bowl	100158	7250	25	1N	6E	1965	Monthly	1
13211	6250	2	15N	9W	1962	3,4,5	1,2	Bruder Ben	10015	8250	5	118	6E	1965	1,2,3,4,5,6	1	College Side	118024	4856	18	2S	5E	1966	Monthly	1
13210	7800	12	18N	13W	1949	1,2,3,4,5	1,2	Head of the	11013	7600	22	68	1E	1963	3,4,5,5,6	1	Twenty-one Mile	118034	7150	1	11S	5E	1965	Monthly	6
13211	8000	12	6N	13W	1957	3,4,5	1	Head Meadow	11010	6600	22	68	1E	1963	3,4,5,5,6	1	MISSOURI RIVER MAIN STEM								
13210	7200	14	8N	12W	1949	3,4	1,2	Little Park	11013	7400	22	68	3E	1963	3,4,5	1									
14210	5800	11	14N	27W	1965	3,4,5	4,2	Howe River	11010	7400	22	68	3E	1963	3,4,5	1	Kings Hill	100204	7420	34	13W	8E	1963	Monthly	1
13204	6450	6	5N	13W	1936	2,3,4,5	8	Howe River	11010	7400	22	68	3E	1963	3,4,5	1	Stempe Pass	120084	6350	16	13W	7W	1963	Monthly	1
13221	5450	19	13N	14W	1951	1,2,3,4,5	8	Howe River	10001	6700	24	8S	6E	1939	2,3,4	1									
13222	4650	3	13N	15W	1951	1,2,3,4,5	8	Howe River	10001	6700	24	8S	6E	1939	2,3,4	1	YELLOWSTONE RIVER								
13223	4650	3	13N	15W	1951	1,2,3,4,5	8	Howe River	10001	6700	24	8S	6E	1939	2,3,4	1									
13212	7100	22	6N	13W	1953	3,4,5	1	Twenty-one Mile	11806	7150	1	11S	5E	1934	1,2,3,4,5	3									
13003	7260	30	6N	17W	1937	3,4,5,5,6	1	MISSOURI RIVER MAIN STEM																	
13002	7100	35	10N	16W	1937	3,4,5	1	Beaulieu Mountain	11001	7950	1	9N	3E	1963	3,4,5	1	Battle Ridge	100114	6200	32	9N	7E	1960	Monthly	1
13001	6000	12	24N	19W	1961	1,2,3,4,5	8	Deer Creek	10009	6450	23	128	3E	1965	3,4,5,5,6	1	North-east Entrance	100074	7350	33	28	14E	1962	Monthly	6
13017	6000	12	24N	19W	1961	1,2,3,4,5	8	Deer Creek	10009	6450	23	128	3E	1965	3,4,5,5,6	1									
13018	7780	19	4N	13W	1959	3,4,5	4	Elk Park	10007	8000	10	8N	8E	1963	3,4,5	1									
13006	6500	19	5N	13W	1936	2,3,4	4	Greenbush	10002	7000	19	9N	8E	1938	3,4,5	1									
13011	6800	35	15N	17W	1956	1,2,3,4,5,5,6	8	Greenbush	10002	7000	19	9N	8E	1938	3,4,5	1									
14201	6800	35	15N	19W	1956	1,2,3,4,5,5,6	8	Rocky Bay	9401	5200	15	28N	16E	1941	3,4,5,5,6	3									
14202	6800	35	15N	19W	1956	1,2,3,4,5,5,6	8	Rocky Bay	9401	5200	15	28N	16E	1941	3,4,5,5,6	3									
14203	6800	35	15N	19W	1956	1,2,3,4,5,5,6	8	Rocky Bay	9401	5200	15	28N	16E	1941	3,4,5,5,6	3									
13016	6480	28	9N	18W	1960	3,4,5	1	Stempe Pass	12001	6600	16	13N	19E	1934	3,4,5	3									
13015	5400	16	2N	17W	1937	3,4,5	1	Ten Mile Lower	12002	6600	12	8N	64	1935	1,2,3,4,5	3									
13014	5400	16	2N	17W	1937	3,4,5	1	Ten Mile Upper	12004	8000	19	8N	5W	1935	1,2,3,4,5	3									
								Ten Mile Upper	12004	8000	19	8N	5W	1935	1,2,3,4,5	3									

LEGEND

L/ Numerals 1, 2, 3, 4, 5, 5½, 6 refer to January 1, February 1, March 1, April 1, May 1, May 15 and June 1.

2/ Minerals refer to Agency that secures the snow survey as follows:

1. U. S. Soil Conservation Service
 2. U. S. Forest Service
 3. U. S. Geological Survey
 4. Montana Power Company
 5. U. S. Indian Service
 6. U. S. National Park Service
 7. WSU Agricultural Experiment Station
 8. U. of M. School of Forestry
 9. Bonifant Water & Power Bureau
 10. U. S. Bureau of Sport Fisheries & Wildlife
- M - Soil Culture

MISSOURI RIVER BASIN

BEAVERHEAD RIVER									
13010	7600	12	8S	16W	1963	3,4,5			
12004	7400	22	8S	7W	1963	2,3,4,5			
13022	7400	22	12S	13W	1965	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13009	8100	11	8S	16W	1968	3,4,5			
11004	69,30	26	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
12001	8850	18	1A5	9W	1948	3,4,5			
13010	7600	12	8S	16W	1963	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13009	8100	11	8S	16W	1968	3,4,5			
11004	69,30	26	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
12001	8850	18	1A5	9W	1948	3,4,5			
13010	7600	12	8S	16W	1963	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13022	8400	21	12S	13W	1965	3,4,5			
13009	8100	11	8S	16W	1968	3,4,5			
11004	69,30	26	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
11003	7400	27	1A5	2W	1948	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
13002	7950	15	10S	15W	1968	3,4,5			
12001	8850	18	1A5	9W	1948	3,4,5			

030000 0000 0000 0000

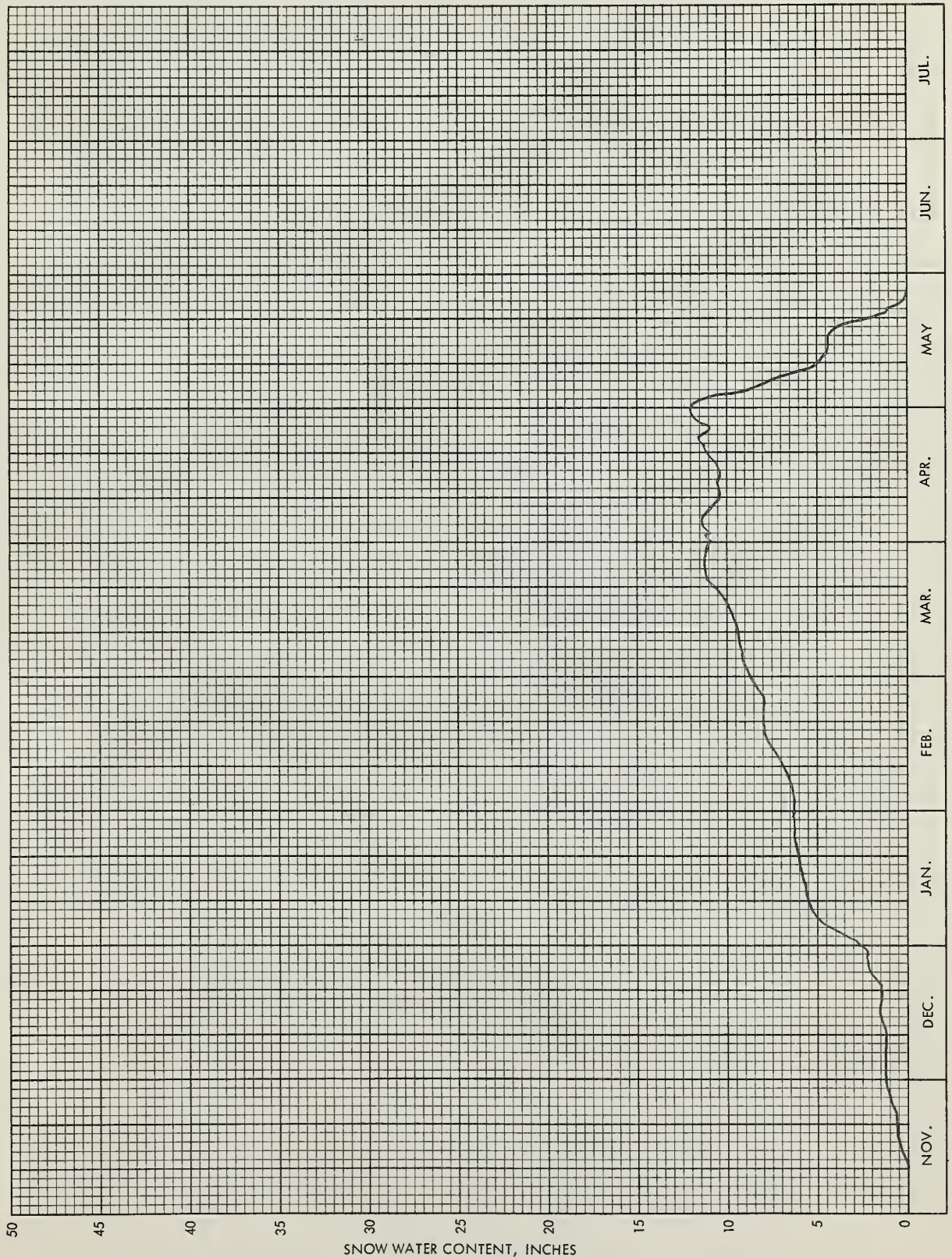
This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor creases and discoloration, characteristic of old paper. The right edge of the page shows the binding of the book, with a dark, possibly leather or cloth, cover visible. The overall tone is warm and historical.

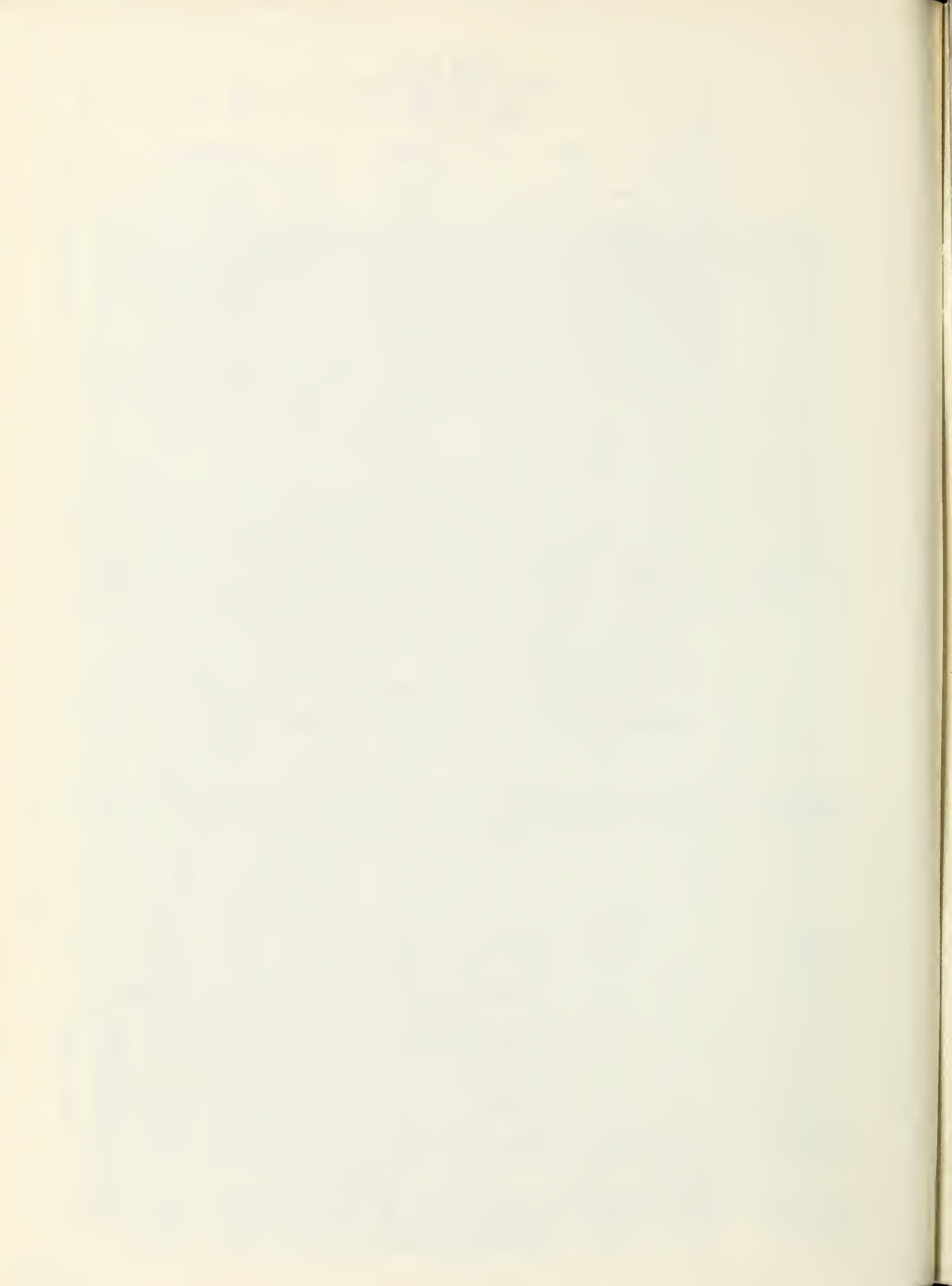
BLACK PINE
SNOW PILLOW DATA

AS OF MAY 1, 1966

Sec. 26 T. 8N R. 15W No. 13C13 Drainage: Columbia

Lat. 46-25 Long. 113-26 Elev. 7100 Clark Fork



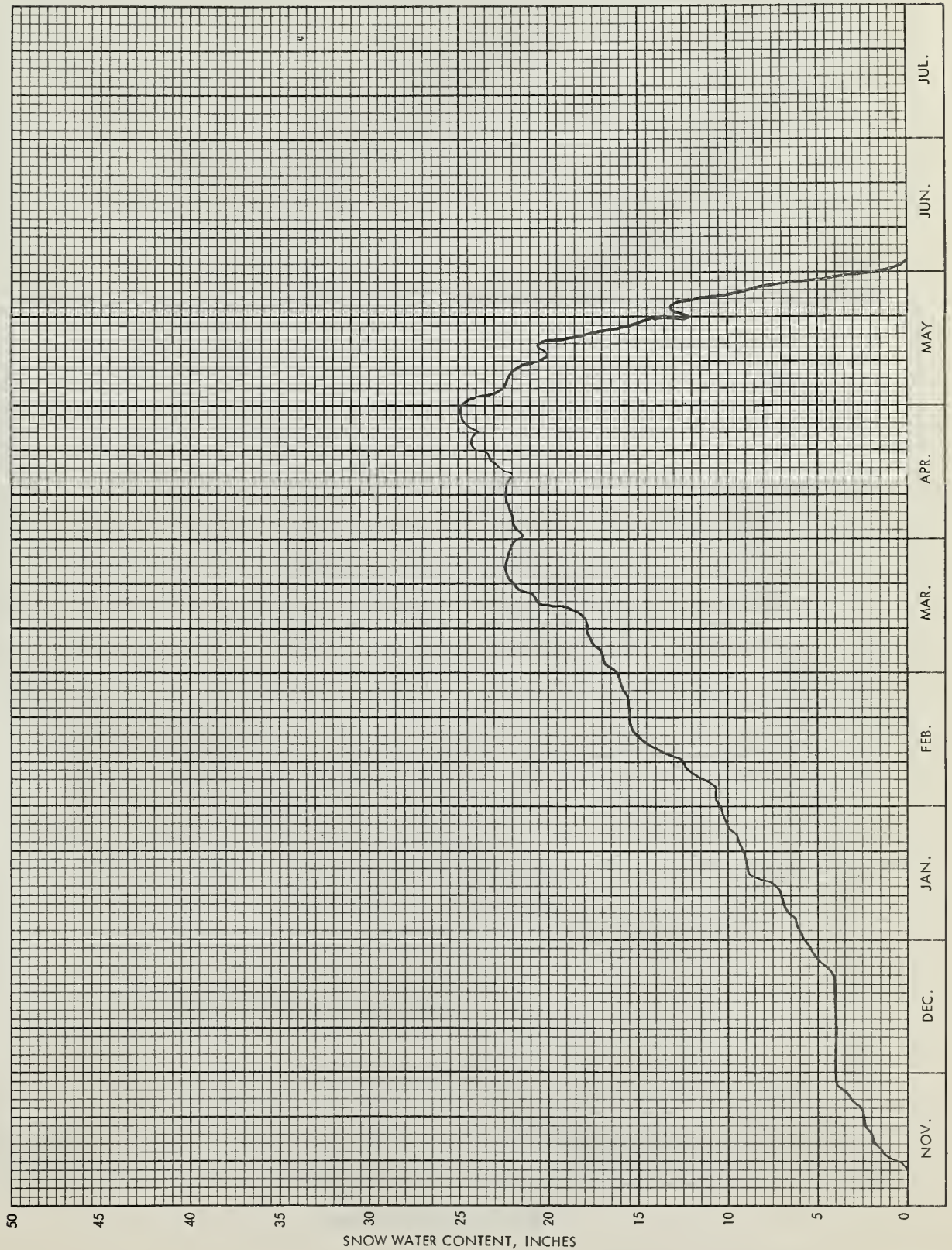


BRIDGER BOWL
SNOW PILLOW DATA

AS OF MAY 1, 1966

Sec. 25 T. 1N R. 6E No. 10D15 Drainage: Missouri

Lat. 45-48 Long. 110-55 Elev. 7250 Gallatin

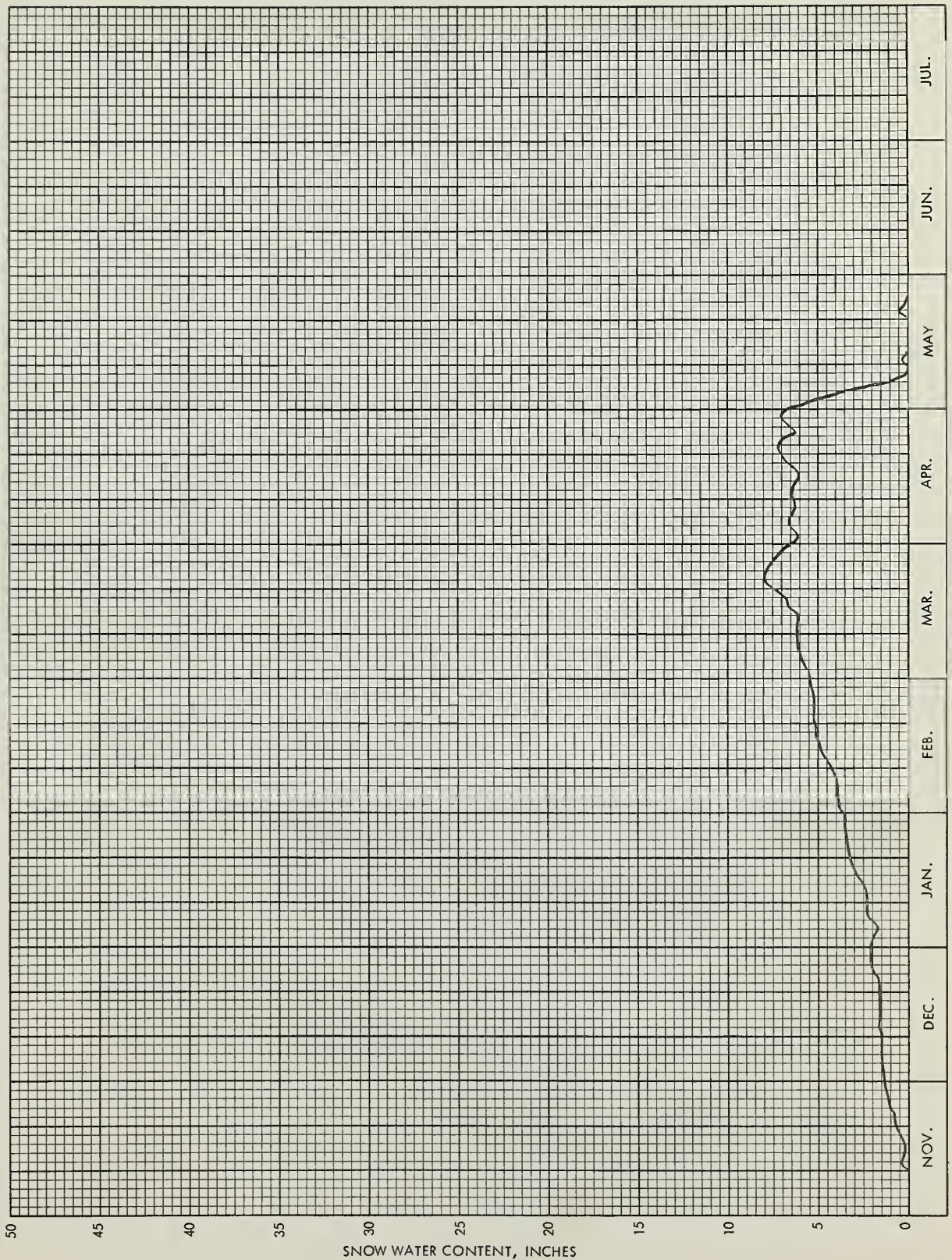


LICK CREEK
SNOW PILLOW DATA

AS OF MAY 1, 1966

Sec. 10 T. 4S R. 6E No. 10D13 Drainage: Missouri

Lat. 45-30 Long. 110-58 Elev. 6860 Gallatin



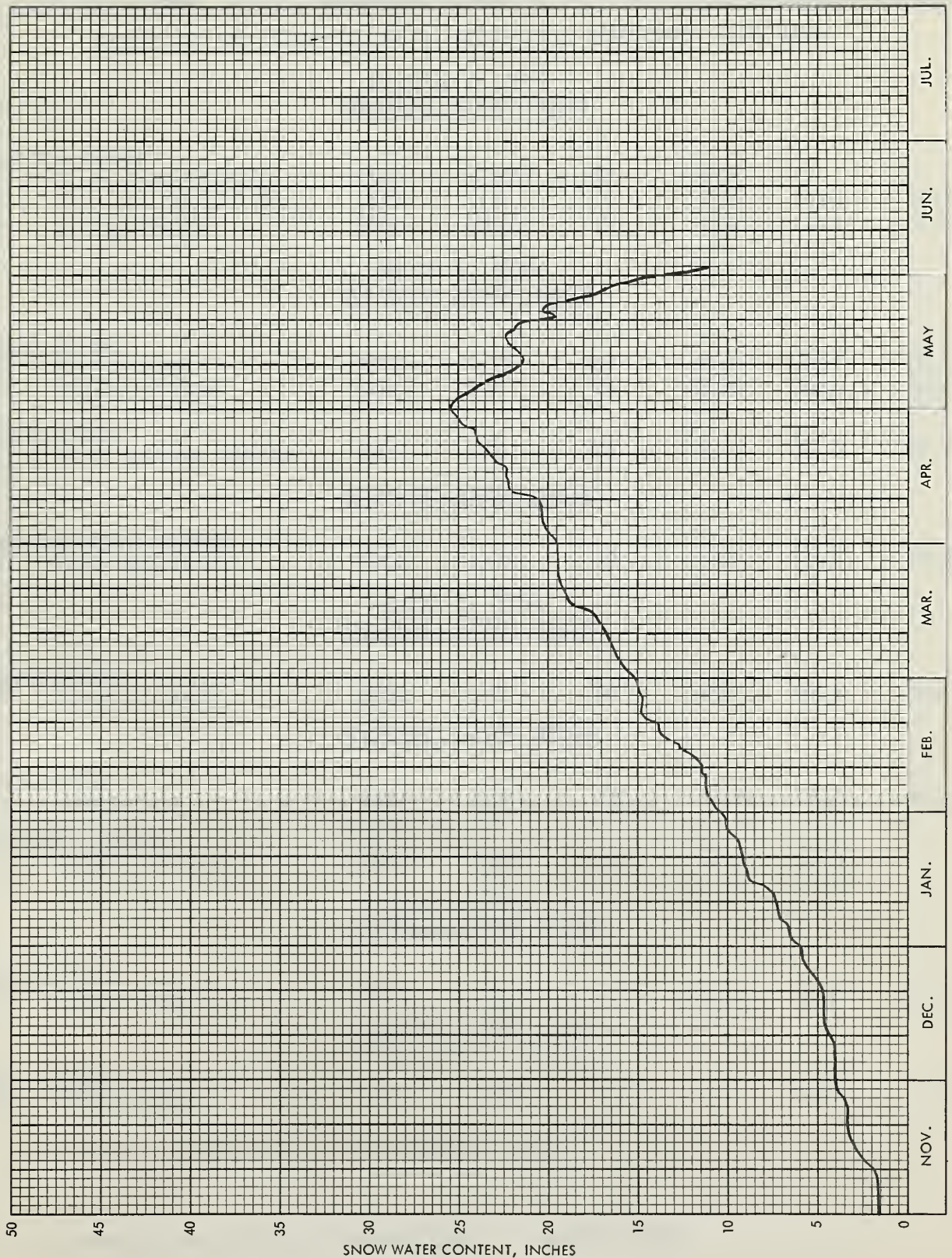


SHOWER FALLS
SNOW PILLOW DATA

AS OF MAY 1, 1966

Sec. 14 T. 5S R. 6E No. 10D16 Drainage: Missouri

Lat. 45-24 Long. 110-57 Elev. 8100 Gallatin



SNOW SURVEY DATA

AS OF

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

ADDITIONS AND CORRECTIONS TO PREVIOUSLY PUBLISHED 1966 DATA

January 1, 1966 COLUMBIA RIVER BASIN

Clark Fork River

13C13	Black Pine Pillow	7100	12/28	SP	2.2	-	-
13C22	Lubrecht Forest No. 4	4650	1/2	5	1.2	1.8	1.8*
13C18	Spring Gulch	6000	12/31	17	2.6	8.2	4.8*

March 1, 1966 COLUMBIA RIVER BASIN

Kootenai River

14A04	Brush Creek	5500	2/28	43	11.7	13.2	12.7*
14A07	Weasel Divide	5450	3/2	81	28.3	35.4	30.4*

Flathead River

14A03	Hell Roaring Divide	5770	3/1	76	25.8	35.3	26.8*
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MISSOURI RIVER BASIN

Sun-Marias-Teton Rivers

12B07	Goat Mountain	7000	2/28	38	9.9	13.4	10.6
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April 1, 1966 COLUMBIA RIVER BASIN

Flathead River

13A16	Mineral Creek	4000	4/3	46	18.1	27.4	22.9
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MISSOURI RIVER BASIN

Madison River

11E05	Hebgen Dam	6550	3/30	24	7.2	15.2	12.2
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Yellowstone River

9D02	West Rosebud	7500	3/30	24	5.4	16.9	-
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May 1, 1966 COLUMBIA RIVER BASIN

Kootenai River

15B11	Baree Creek	5500	5/2	77	41.0	46.2	49.1
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MISSOURI RIVER BASIN

Madison River

11E05	Hebgen Dam	6550	4/29	1	.5	10.8	4.8
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SP - Snow Pillow Observation - water content only.

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SNOW SURVEY DATA

AS OF MAY 15, 1966

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

15B11	Baree Creek	5500	5/16	54	26.7	36.6	42.3*
15B16	Baree Midway	4600	5/16	38	17.5	-	-
15B15	Baree Trail	3800	5/16	0	0.0	0.0	-
BC 10	Fernie	3500	5/13	0	0.0	0.0	-
BC 11	Glacier	4100	5/13	47	25.1	17.4	19.3*
14A11	Graves Creek	4300	5/16	14	5.6	11.6	-
BC 43	Gray Creek	5100	5/15	41	16.2	17.5	17.6*
BC 33	Kicking Horse	5400	5/15	25	9.4	-	7.8*
BC 10A	New Fernie	4100	5/13	1	0.6	0.8	-
15A01	Red Mountain	6000	5/17	29	12.8	17.0	18.4*
BC 20A	Sullivan Mine	5100	5/13	12	5.4	3.9	6.8*
14A07	Weasel Divide	5450	5/16	51	23.6	34.5	32.6*

FLATHEAD RIVER

14A03	Hell Roaring Divide	5770	5/16	36	16.7	29.7	-
13B07	North Fork Jocko	6330	5/17	52	26.4	50.4	-

CLARK FORK RIVER

13C13	Black Pine	7100	5/17	7	2.8	15.6	-
13C13	Black Pine Pillow	7100	5/17	SP	4.4	-	-
13C03	Skalkaho Summit	7260	5/16	28	12.4	34.2	23.0*
13C01	Stuart Mountain	7400	5/15	38	17.5	34.6	-

BITTERROOT RIVER

13D02	Gibbons Pass	7100	5/16	6	2.6	26.9	20.1*
14C07	Lost Horse	5940	5/17	26	11.8	33.0	-
13D22	Saddle Mountain	7940	5/16	30	12.4	34.4	-
14C08	Twin Lakes	6510	5/17	46	21.4	48.8	-

SP - Snow Pillow Observation - water content only.

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CHICAGO, ILLINOIS

1911

NAME	AGE	SEX	RELATION	DATE	REMARKS
JOHN	25	M	SON	1911	
MARY	22	F	DAUGHTER	1911	
JOHN	20	M	SON	1911	
MARY	18	F	DAUGHTER	1911	
JOHN	15	M	SON	1911	
MARY	12	F	DAUGHTER	1911	
JOHN	10	M	SON	1911	
MARY	8	F	DAUGHTER	1911	
JOHN	6	M	SON	1911	
MARY	4	F	DAUGHTER	1911	
JOHN	2	M	SON	1911	
MARY	1	F	DAUGHTER	1911	

THE UNIVERSITY OF CHICAGO

SNOW SURVEY DATA

AS OF MAY 15, 1966

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

MISSOURI RIVER BASIN

GALLATIN RIVER

10D14	Arch Falls	7350	5/17	18	7.2	19.0	-
10D15	Bridger Bowl Pillow	7250	5/18	SP	15.7	32.6	-
10D04	Devil's Slide	8100	5/17	48	19.5	35.0	-
10D03	Hood Meadow	6600	5/17	0	0.0	10.0	-
10D13	Lick Creek Pillow	6860	5/13	SP	0.0	8.2	-
10D16	Shower Falls Pillow	8100	5/17	SP	22.4	-	-

MISSOURI RIVER (Main Stem)

10C09	Deadman Creek	6450	5/16	0	0.0	9.0	-
10C01	Kings Hill	7500	5/16	27	8.2	21.6	-

JUDITH RIVER

10C06	Spur Park	8000	5/16	46	17.8	31.0	-
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UPPER YELLOWSTONE RIVER

9D01	Camp Senia	7890	5/16	14	4.8	14.6	-
9D04	Timberline Creek	8850	5/16	38	13.3	29.0	-

SP - Snow Pillow Observation - water content only.

SNOW SURVEY DATA

AS OF JUNE 1, 1966

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

BC 11	Glacier	4100	5/31	29	15.4	11.5	8.4*
14A11	Graves Creek	4300	6/1	0	0.0	0.8	-
BC 43	Gray Creek	5100	5/29	26	12.3	11.2	9.5*
BC 32	Marble Canyon	5000	5/28	0	0.0	0.0	-
15A01	Red Mountain	6000	6/1	2	0.8	7.4	6.6*
14A07	Weasel Divide	5450	6/1	17	8.6	23.6	-

FLATHEAD RIVER

13B03	Big Creek	6750	6/1	41	23.3	49.4	42.5*
13A02	Desert Mountain	5600	5/31	0	0.0	0.7	-
13B04	Fatty Creek	5500	6/1	0	0.0	5.8	6.0*
14A03	Hell Roaring Divide	5770				16.0	-
13B07	North Fork Jocko	6330	6/2	14	7.4	33.9	30.3*

CLARK FORK RIVER

13C13	Black Pine	7100	6/1	0	0.0	5.0	-
13C13	Black Pine Pillow	7100	6/1	0	0.0	-	-
13C03	Skalkaho Summit	7260	5/31	3	1.2	24.0	14.1*
13C01	Stuart Mountain	7400	5/27	15	7.4	30.5	20.4*
14B01	TV Mountain	6800	5/28	5	1.9	-	-

BITTERROOT RIVER

13D02	Gibbons Pass	7100	5/31	0	0.0	14.6	6.7*
14C07	Lost Horse	5940	5/31	6	3.0	21.9	-
13D22	Saddle Mountain	7940	5/31	0	0.0	26.4	-
14C08	Twin Lakes	6510	5/31	18	9.4	37.3	-

SNOW SURVEY DATA

AS OF JUNE 1, 1966

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

MISSOURI RIVER BASIN

GALLATIN RIVER

10D14	Arch Falls	7350	5/29	4	1.4	17.0	-
10D15	Bridger Bowl Pillow	7250	5/31	SP	2.1	28.0	-
10D04	Devil's Slide	8100	5/29	31	14.5	35.2	-
10D03	Hood Meadow	6600	5/29	0	0.0	4.4	-
10D13	Lick Creek Pillow	6860	5/1	SP	0.0	0.0	-
10D16	Shower Falls Pillow	8100	5/29	SP	15.6	-	-

MISSOURI RIVER (Main Stem)

10C09	Deadman Creek	6450	5/31	0	0.0	0.0	-
10C01	Kings Hill	7500	5/31	1	0.4	18.8	-

JUDITH RIVER

10C06	Spur Park	8000	5/31	18	8.0	27.8	-
-------	-----------	------	------	----	-----	------	---

UPPER YELLOWSTONE RIVER

9D01	Camp Senia	7890	5/31	0	0.0	14.7	-
9D04	Timberline Creek	8850	5/31	9	4.3	28.8	-

SP - Snow Pillow Observation - water content only.

SOIL MOISTURE DATA

AS OF

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

ADDITIONS AND CORRECTIONS TO PREVIOUSLY PUBLISHED 1966 DATA

January 1, 1966 COLUMBIA RIVER BASIN

<u>Kootenai</u>								
15A02M	Raven R. S.	3050	48	23.0	5/5	19.7	21.5	-

February 1, 1966 COLUMBIA RIVER BASIN

<u>Flathead</u>								
13A05M	Marias Pass	5250	54	6.5	1/31	5.4	5.5	5.0

MISSOURI RIVER BASIN

<u>Madison</u>								
10D04M	Red Bluff	4800	40	4.7	2/2	1.9	2.3	2.1

March 1, 1966 COLUMBIA RIVER BASIN

<u>Flathead</u>								
13A05M	Marias Pass	5250	54	6.5	3/5	5.3	5.8	5.3

April 1, 1966 MISSOURI RIVER BASIN

<u>Beaverhead</u>								
11E13M	Lakeview	6700	48	15.3	4/6	9.3	13.4	10.3

May 1, 1966 COLUMBIA RIVER BASIN

<u>Kootenai</u>								
15B15M	Baree Trail	3800	48	7.5	5/2	7.2	6.7	-
15A02M	Raven R. S.	3050	48	23.0	5/2	21.8	22.0	-

MISSOURI RIVER BASIN

<u>Beaverhead</u>								
11E13M	Lakeview	6700	48	15.3	5/2	15.1	16.5	15.3

<u>Yellowstone</u>								
10D11M	Battle Ridge	6020	48	17.6	4/29	15.6	16.6	15.4

SOIL MOISTURE DATA

AS OF JUNE 1, 1966

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

COLUMBIA RIVER BASIN

Kootenai

15B15M	Baree Trail	3800	48	7.5			-	-
14A10M	Murphy Lake R.S.	3000	48	22.6	6/1	20.8	22.1	-
15A02M	Raven R.S.	3050	48	23.0			-	-

Flathead

13A02M	Desert Mountain	5600	54	8.4	5/31	8.9	9.6	8.8
13A05M	Marias Pass	5250	54	6.5			6.1	5.8

Clark Fork

13C13M	Black Pine	7100	48	10.0	6/1	8.0	-	-
13C15M	Georgetown Lake	6450	48	9.0	5/31	8.3	8.0	7.8
13B19M	Seeley Lake R.S.	4030	48	11.9			10.8	-
13C03M	Skalkaho Summit	7260	48	10.8	5/31	9.8	10.2	-

Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	5/31	6.8	7.0	7.1
14C05M	Lolo Pass	5250	48	10.6	5/26	9.8	10.1	-

MISSOURI RIVER BASIN

Beaverhead

11E13M	Lakeview	6700	48	15.3	6/1	13.8	15.7	14.9
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Madison

10D04M	Red Bluff	4800	40	4.7	6/1	2.1	2.4	2.5
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Gallatin

10D15M	Bridger Bowl	7250	48	15.8	5/31	16.6	-	-
11D02M	College Site	4856	54	14.5	6/3	10.8	13.7	11.2
10D13M	Lick Creek	6860	48	18.8	6/1	18.7	-	-
11E06M	Twenty-One Mile	7150	48	10.0	5/28	9.6	9.9	-

Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	5/31	11.0	10.0	-
12C08M	Stemple Pass	6350	48	5.9	5/31	5.0	5.2	5.2

Yellowstone

10D11M	Battle Ridge	6020	48	17.6	5/31	15.2	15.8	15.4
10D07M	Northeast Entrance	7350	48	9.4			9.7	9.1

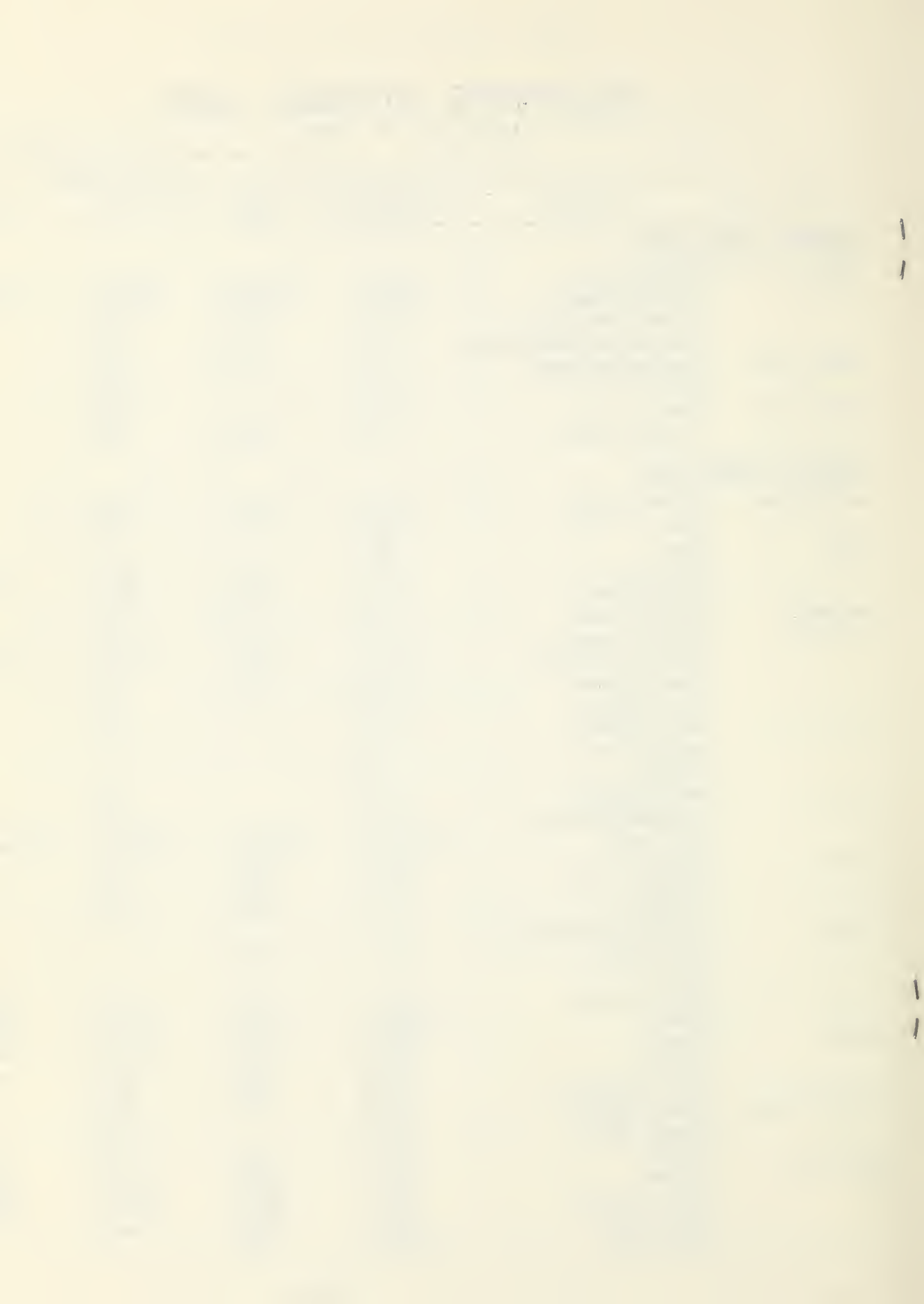
**AVERAGE FOR PERIOD OF RECORD

RESERVOIR STORAGE DATA

AS OF MAY 31, 1966

(1000 Acre Feet)

			USEABLE STORAGE			
BASIN	RESERVOIR	USEABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE	
COLUMBIA RIVER BASIN						
Flathead	Hungry Horse	3,428.0	3,046.0	2,245.0	2,793.6**	
	Flathead Lake	1,791.0	1,509.0	1,457.0	1,559.2	
	Camas (Sum or 4)	45.2	34.3	35.0	41.7	
	Mission Valley (Sum of 8)	100.3	61.4	58.3	68.8	
Clark Fork	Georgetown Lake	31.0	21.7	25.3	24.0	
	Noxon Rapids	334.6		192.2	-	
Bitterroot	Como	34.9	27.8	28.7	29.0	
	Painted Rocks	31.7	32.4	33.2	32.4	
MISSOURI RIVER BASIN						
Beaverhead	Clark Canyon	328.9	134.7	147.3	-	
	Lima	84.0	70.1	77.9	58.1	
Ruby	Ruby	38.8		-	35.4**	
	Hebgen Lake	377.5	354.6	262.3	270.5	
	Ennis Lake	41.0	39.4	24.5	35.6	
Gallatin	Middle Creek	8.0	8.2	5.1	6.4**	
Missouri	Canyon Ferry	2,043.0	1,528.0	1,603.0	1,756.8**	
	Hauser & Helena	61.9	59.0	46.5	53.2	
	Lake Helena	10.4	9.4	5.3	7.6	
	Holter Lake	81.9	77.4	70.8	72.8	
	Smith River	10.7		11.6	8.7	
	Ackley Lake	5.8		-	4.2	
	Durand	7.0		7.0	6.4	
	Martinsdale	23.1		20.5	15.0	
	Deadman's Basin	72.2		70.2	46.8**	
	Fort Peck	19,410.0	16,560.0	16,880.0	11,651.7	
	Sun	Gibson	105.0	95.0	94.4	94.4
		Willow Creek	32.3	27.0	25.2	27.0
		Pishkun	32.0	27.0	30.9	28.4
	Marias	Lower Two Medicine		-	-	9.0
Four Horns		19.2	15.0	-	11.6	
Swift			-	-	29.6	
Lake Frances		112.0	100.9	97.5	104.4	
Tiber		1,347.0	752.9	988.2	729.5**	
Milk	Fresno	127.2	105.1	119.9	107.1	
	Nelson	66.8	54.7	55.5	40.7	
	Lake Sherburne	66.1	31.8	35.6	35.2	
Yellowstone	Mystic Lake	20.8	6.0	1.9	6.3	
	Tongue River	68.0		26.9	28.7	
	Cooney	27.5	23.4	15.2	17.9**	
Big Horn	Boysen	700.3	346.8	241.9	228.5	
	Buffalo Bill	373.1	284.3	184.7	205.4	
	Bull Lake	151.7	96.8	44.4	72.4	
	Yellowtail	1,409.0	490.9	-	-	



Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region 1, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. Bonneville Power Administration
Portland, Oregon

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

State Water Conservation Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

Department of Northern Affairs
and National Resources
Calgary, Alberta

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